

# REPORT DOCUMENTATION PAGE

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1. REPORT DATE (DD-MM-YYYY)

2. REPORT TYPE  
Technical Papers

3. DATES COVERED (From - To)

4. TITLE AND SUBTITLE

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

5d. PROJECT NUMBER  
2303

5e. TASK NUMBER  
m2c8

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Air Force Research Laboratory (AFMC)  
AFRL/PRS  
5 Pollux Drive  
Edwards AFB CA 93524-7048

8. PERFORMING ORGANIZATION  
REPORT

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Air Force Research Laboratory (AFMC)  
AFRL/PRS  
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10. SPONSOR/MONITOR'S  
ACRONYM(S)

11. SPONSOR/MONITOR'S  
NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

1121 011

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:

17. LIMITATION  
OF ABSTRACT

18. NUMBER  
OF PAGES

19a. NAME OF RESPONSIBLE  
PERSON

a. REPORT

b. ABSTRACT

c. THIS PAGE

Unclassified

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A

Leilani Richardson

19b. TELEPHONE NUMBER

(include area code)

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Prescribed by ANSI Std. Z39.18

62

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MEMORANDUM FOR PRS (Contractor/In-House Publication)

FROM: PROI (TI) (STINFO)

26 September 2000

SUBJECT: Authorization for Release of Technical Information, Control Number: **AFRL-PR-ED-AB-2000-182**  
Vij, Vandana; Vij, Ashwani (USC); Wilson, W.; Christe, K.O. (ERC); "Recent Progress in Nitrogen  
Fluoride Chemistry"

**15<sup>th</sup> Winter Fluorine Conference (St. Petersburg, FL, 14 Jan 2001)**  
**(Past Deadline: 14 Sep 2000)**

**(Statement A)**

1. This request has been reviewed by the Foreign Disclosure Office for: a.) appropriateness of distribution statement, b.) military/national critical technology, c.) export controls or distribution restrictions, d.) appropriateness for release to a foreign nation, and e.) technical sensitivity and/or economic sensitivity.

Comments: \_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

2. This request has been reviewed by the Public Affairs Office for: a.) appropriateness for public release and/or b) possible higher headquarters review

Comments: \_\_\_\_\_  
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Signature \_\_\_\_\_ Date \_\_\_\_\_

3. This request has been reviewed by the STINFO for: a.) changes if approved as amended, b.) appropriateness of distribution statement, c.) military/national critical technology, d.) economic sensitivity, e.) parallel review completed if required, and f.) format and completion of meeting clearance form if required

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

4. This request has been reviewed by PRS for: a.) technical accuracy, b.) appropriateness for audience, c.) appropriateness of distribution statement, d.) technical sensitivity and economic sensitivity, e.) military/national critical technology, and f.) data rights and patentability

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

APPROVED/APPROVED AS AMENDED/DISAPPROVED

\_\_\_\_\_  
PHILIP A. KESSEL Date  
Technical Advisor  
Propulsion Science and Advanced Concepts Division

Cleared (PA) \_\_\_\_\_  
Logged (PA) \_\_\_\_\_  
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RECENT PROGRESS IN NITROGEN FLUORIDE CHEMISTRY. **Vandana Vij**, Ashwani Vij, William W. Wilson, Karl O. Christe, Air Force Research Laboratory, Edwards AFB, CA 93524 and University of Southern California, Los Angeles, CA 90089.

For the preparation of  $N_5^+$  salts on a larger scale, it was necessary to prepare the corresponding precursors in an efficient manner and in large quantities. In this paper, process improvements in this direction are described. Furthermore, the catalytic conversion of trans- $N_2F_2$  to its cis-isomer is discussed. Also discovered during the isomerization studies was a novel synthetic route to  $NF_4^+$  salts at relatively low temperature and pressure. A structural analysis of the  $N_2F^+$  cation was also carried out for  $N_2F^+SbF_6^-$  and  $N_2F^+Sb_2F_{11}^-$ .

ABSTRACT. Please be BRIEF—150 words maximum if possible. Title of paper should be ALL CAPS; author(s) listed by first name, middle initial, last name; indicate address with zip code.

A. DIVISION OF FLUO Division Member ☒ Yes ☐ No

B. ACS MEMBER ☒ Yes ☐ No

C. TITLE OF PAPER Method for solving some disordered crystal structures and its application to the structures of  $NF_2O^+$  and  $SO_2F^-$

Please indicate preference: ☒ Oral ☐ Poster  
☐ withdraw if oral/poster format cannot be met

D. AUTHORS

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Last Name

First Name

MI

Vij Vandana

Presenting Author (if different):

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William

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Christe

Karl

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(To be filled in by Division)

Paper number as listed on program \_\_\_\_\_

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G. For contributed papers, do authors  
meet criteria outline in ACS Bylaw VI,  
Section 6(3)? See instructions.

☐ Yes ☐ No

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